



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/537,461	06/03/2005	Tsuyoshi Fukuta	Q88316	4734
23373	7590	10/26/2006		EXAMINER
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037				GROUP, KARL E
			ART UNIT	PAPER NUMBER
			1755	

DATE MAILED: 10/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/537,461	FUKUTA ET AL.
	Examiner Karl E. Group	Art Unit 1755

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is **FINAL**.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 18-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 18-21,23-26 and 29-34 is/are rejected.
- 7) Claim(s) 22,27 and 28 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 6-3-05,6-26-06.
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application
- 6) Other: \_\_\_\_\_.

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 21,26,30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 21 is not considered to further limit claim 19 because claim 19 already requires hexagonal SrAl<sub>2</sub>Si<sub>2</sub>O<sub>8</sub>.

Claim 26 "said Al<sub>2</sub>O<sub>3</sub> crystal grams [grains]" lacks antecedent basis.

Claim 30 lacks an active process step to clearly define the claimed invention. Terminology "comprising sintering" is suggested.

Claim 22 terminology such as "further comprises" is suggested.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 18-21,23-26,29-34 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Terashi et al (5,756,408).

Terashi et al teach a dielectric composition including firing a glass composition including 44 wt%  $\text{SiO}_2$ , 29 wt%  $\text{Al}_2\text{O}_3$ , 11 wt%  $\text{MgO}$ , 7wt%  $\text{ZnO}$  and 9 wt%  $\text{B}_2\text{O}_3$  in combination with  $\text{SrTiO}_3$  and  $\text{ZrO}_2$ , see example 2, column 14 and compositions of tables 2-4. The firing temperature is below 1000°C, which would form hexagonal phase of  $\text{SrAl}_2\text{Si}_2\text{O}_8$ . Examples 3-1 through 3-11,3-18,3-19 include lawsonite ( $\text{SrAl}_2\text{Si}_2\text{O}_8$ ) phase and alumina. The particle size of the alumina is .3 microns, column 16, lines 26-27. Terashi also teaches a glass phase including  $\text{SiO}_2$ ,  $\text{Al}_2\text{O}_3$  and  $\text{SrO}$ , see column 4, lines 39-40. The dielectric material may be wired with copper, silver or gold, column 2, lines 35-36.

Although Terashi et al fail to disclose the claimed bending strength it is well settled that when a claimed composition appears to be substantially the same as a composition disclosed in the prior art, the burden is properly upon the applicant to prove by way of tangible evidence that the prior art composition does not necessarily possess characteristics attributed to the CLAIMED composition. *In re Spada*, 911 F.2d 705, 15 USPQ2d 1655 (Fed. Circ. 1990); *In re Fitzgerald*, 619 F.2d 67, 205 USPQ 594 (CCPA 1980); *In re Swinehart*, 439 F.2d 2109, 169 USPQ 226 (CCPA 1971).

#### ***Allowable Subject Matter***

5. Claims 22,27 and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Terashi et al fail to teach a composition further including monoclinic  $\text{SrAl}_2\text{Si}_2\text{O}_8$  and the compositions set forth in claims 27 and 28.

Art Unit: 1755

6. Umayahara et al (6,699,605) is cited as prior art of interest for teaching a SrAl<sub>2</sub>Si<sub>2</sub>O<sub>8</sub> phase however fails to teach an alumina phase.

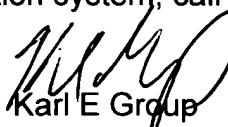
7. Terashi et al (6,201,370) teach a SrAl<sub>2</sub>Si<sub>2</sub>O<sub>8</sub> composition however fail to teach SrAl<sub>2</sub>Si<sub>2</sub>O<sub>8</sub> in combination with alumina.

7. Yokoi et al (6,121,174) includes an example having alumina however SrAl<sub>2</sub>Si<sub>2</sub>O<sub>8</sub> is not formed, example 14.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl E. Group whose telephone number is 571-272-1368. The examiner can normally be reached on M-F (6:30-4:00) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorendo can be reached on 571-272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Karl E Group  
Primary Examiner  
Art Unit 1755

Keg  
10-23-06